Framework for Developing Suspended and Bedded Sediment (SABS) Water Quality Criteria

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Keywords: suspended sediments, bedded sediments, water quality criteria, turbidity, criteria development

Suspended and bedded sediments (SABS) occur naturally in all types of waterbodies. In appropriate amounts, SABS are essential to aquatic ecosystems; however, an imbalanced loading of SABS to aquatic systems has been one of the major causes of water quality impairment in the Nation. Therefore, States, tribes, and territories need to develop SABS standards and criteria. To assist with this effort, the Office of Water and the Office of Research and Development have prepared a *Framework for Developing Suspended and Bedded Sediment (SABS) Water Quality Criteria*. The *Framework* consists of a stepwise process for criteria development, which includes gathering information, synthesizing the state of knowledge, analyzing available data, gathering more data if needed, and selecting SABS criteria values. The process is designed to engage stakeholders, develop several lines of scientific evidence, and document the decision analysis process while accommodating regional differences. Water quality standards based on criteria developed with this process will provide a range of pollution control activities while simultaneously providing technical background to routinely develop protective and restoration plans, such as the calculation of total maximum daily loads (TMDLs). The *Framework* also includes technical methods for measuring, classifying, and associating various levels of SABS with designated uses. Methods include those for selection of appropriate indicators of water resource impairment due to SABS imbalances. Various types of indicators are suggested including direct measures of SABS, their effects on biota, and sources of SABS imbalances. Another main activity is classification based on designated uses and the natural variability associated with different types of waterbodies (streams, rivers, lakes, estuaries, wetlands, and coastal waters), regions, and other natural factors. The rationale for selection of criteria values depends on the demonstration of associations between levels of SABS and their impact on designated uses. Several statistical methods are described for developing associations that can be used to support decision-making. This framework will be of use to States, regions, and tribes who are developing SABS criteria and standards. It should also be useful for the development of criteria for other stressors, such as nutrients.

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